

# Work Order ID 146304

\*146304\*

Page 1

May 17, 2016 10:39:06 AM

Item ID: D4785-117 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: Rib Assembly  
 Start Date: 5/17/2016 Start Qty: 2.00 \*2\* Cust Item ID:  
 Required Date: 5/19/2016 Req'd Qty: 2.00 \*2\* Customer:  
 Reference:

Approvals: Process Plan: SJA Date: 5/17/16 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

| Sequence ID/<br>Work Center ID | Operation<br>Description                                                 | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| <b>Draw Nbr</b>                | <b>Revision Nbr</b>                                                      |                      |         |        |              |               |               |                  |                |
| D4785                          | B                                                                        |                      |         |        |              |               |               |                  |                |
| 100                            |                                                                          | 0.00                 |         |        |              |               |               |                  |                |
| <b>*100*</b>                   |                                                                          |                      |         |        |              |               |               |                  |                |
| Large Fab                      | Memo                                                                     | 1.74                 |         |        |              |               |               |                  |                |
| Large Fab                      | 1- Pick D4306-1 and drill and chamfer hole as per dwg D4785 using DT9922 |                      |         |        |              |               |               |                  |                |
| 105                            | QC6- Inspect dimensions to drawing                                       | 0.00                 |         |        |              |               |               |                  |                |
| <b>*105*</b>                   |                                                                          |                      |         |        |              |               |               |                  |                |
| QC                             | Memo                                                                     | 0.00                 |         |        |              |               |               |                  |                |
| Quality Control                |                                                                          |                      |         |        |              |               |               |                  |                |
| 107                            | Weld per dwg A/R S.S. rod Batch: <u>132613</u>                           | 0.00                 |         |        |              |               |               |                  |                |
| <b>*107*</b>                   |                                                                          |                      |         |        |              |               |               |                  |                |
| Large Fab                      | Memo                                                                     | 1.36                 |         |        |              |               |               |                  |                |
| Large Fab                      | 1- weld bushing as per dwg D4785<br>2- grind welds flush                 |                      |         |        |              |               |               |                  |                |

2 - MAY 17 2016 DAS 24 9-89  
 2 - MAY 17 2016 DAS 43 9-89  
 2 - MAY 17 2016 DAS 24 9-89

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

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| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>             Skid-tube <input type="checkbox"/><br/>             Machining <input type="checkbox"/><br/>             Thermoforming <input type="checkbox"/><br/>             Large Fab <input type="checkbox"/> </div> <div>             Cross tube <input type="checkbox"/><br/>             Small Fab <input type="checkbox"/><br/>             Finishing <input type="checkbox"/><br/>             Composite <input type="checkbox"/> </div> <div>             Water Jet <input type="checkbox"/><br/>             Prod. Eng. Coord. <input type="checkbox"/><br/>             Rec/Store/Packaging <input type="checkbox"/><br/>             Supplier <input type="checkbox"/> </div> <div>             Engineering <input type="checkbox"/><br/>             Quality <input type="checkbox"/><br/>             Other <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                       |                                                 |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Step #:                                                                                                                                                                            | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | MRB (QS1042) Approval |                                                 |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                    | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                       | Completed By                                    |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                       | Lead hand / Supervisor<br>Approval Verification |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                       | QC / QA Coordinator<br>Approval                 |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                       |                                                 |  |
| <b>Root Cause</b><br><div style="display: flex; justify-content: space-between;"> <div>             Environment <input type="checkbox"/><br/>             Design <input type="checkbox"/><br/>             Doc/Data <input type="checkbox"/><br/>             Equip/Tooling <input type="checkbox"/><br/>             Handling/Pre <input type="checkbox"/><br/>             Material <input type="checkbox"/><br/>             Internal Transport <input type="checkbox"/><br/>             Tribal Knowledge <input type="checkbox"/><br/>             LOA <input type="checkbox"/><br/>             Substation <input type="checkbox"/><br/>             Past Expiry Date <input type="checkbox"/><br/>             Misidentified <input type="checkbox"/> </div> <div>             No Re-verification <input type="checkbox"/><br/>             Operator <input type="checkbox"/><br/>             Offset/Setup <input type="checkbox"/><br/>             Supplier <input type="checkbox"/><br/>             Training <input type="checkbox"/><br/>             Use for Testing <input type="checkbox"/><br/>             Poor Information <input type="checkbox"/><br/>             Rushing <input type="checkbox"/><br/>             Product Improvement <input type="checkbox"/><br/>             Process Improvement <input type="checkbox"/><br/>             Manufacturing Process <input type="checkbox"/><br/>             Past Due <input type="checkbox"/> </div> </div> |                                                                                                                                                                                    | <b>FAULT CATEGORY</b><br><div style="display: flex; justify-content: space-between;"> <div>             Pressure/Forced <input type="checkbox"/><br/>             Bending <input type="checkbox"/><br/>             Centre Not Concentric <input type="checkbox"/><br/>             Cracks <input type="checkbox"/><br/>             Crimp/Kink/Ripple/Wave <input type="checkbox"/><br/>             Cuffs <input type="checkbox"/><br/>             Crushing <input type="checkbox"/><br/>             Heat Treat <input type="checkbox"/><br/>             Wave/Twist in Tube <input type="checkbox"/><br/>             Marks/Chatter <input type="checkbox"/> </div> <div>             Temperature/Cure <input type="checkbox"/><br/>             Set-up <input type="checkbox"/><br/>             BOM/Route <input type="checkbox"/><br/>             Broken/Damage/Defect <input type="checkbox"/><br/>             Inspection Incomplete/Unqualified <input type="checkbox"/><br/>             Contamination <input type="checkbox"/><br/>             Countersink <input type="checkbox"/><br/>             Cut Too Short <input type="checkbox"/><br/>             Instructions Incomplete/Unclear <input type="checkbox"/><br/>             Drill Holes <input type="checkbox"/> </div> <div>             Power Loss/Surge <input type="checkbox"/><br/>             Folio/Program <input type="checkbox"/><br/>             Grain <input type="checkbox"/><br/>             Weld <input type="checkbox"/><br/>             Wrong Stock Pulled <input type="checkbox"/><br/>             Out of Sequence <input type="checkbox"/><br/>             Off-set <input type="checkbox"/><br/>             Misabeled <input type="checkbox"/><br/>             Fit/Function <input type="checkbox"/><br/>             Misaligned/off center <input type="checkbox"/> </div> <div>             Positioned Wrong <input type="checkbox"/><br/>             Outside Dimensions <input type="checkbox"/><br/>             Over/Under tolerance <input type="checkbox"/><br/>             Part Incorrect <input type="checkbox"/><br/>             Part Lost/Missing <input type="checkbox"/><br/>             Part Moved <input type="checkbox"/><br/>             Drawing <input type="checkbox"/><br/>             Finish <input type="checkbox"/><br/>             Misread <input type="checkbox"/><br/>             Turning Sequence <input type="checkbox"/> </div> </div> |                       |                                                 |  |
| OTHER : <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                       |                                                 |  |

**Work Order ID 146304**

May 17, 2016 10:39:06 AM

**\*146304\***

Page 2

Item ID: D4785-117

Accept

**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Stop

**\*NS2\***

Item Name: Rib Assembly

Start Date: 5/17/2016 Start Qty: 2.00

**\*2\***

Cust Item ID:

Required Date: 5/19/2016 Req'd Qty: 2.00

**\*2\***

Customer:

Reference:

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run

Start

**\*NR1\***

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop

**\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

110

QC5- Inspect part completeness to step on W/O

0.00

**\*110\***

QC

Memo

0.04

Quality Control

2x **DAS 43** MAY 17 2016  
9-89

120

QC10- Inspect visual per QSI004- ground welds

0.00

**\*120\***

QC

Memo

0.00

Quality Control

2x **DAS 43** MAY 17 2016  
9-89

130

Identify as per dwg & Stock Location: W/A 04

0.00

**\*130\***

Packaging

Memo

0.02

Packaging

LOCATION: WA004

2x **DAS 43** MAY 17 2016  
9-89

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                               |  |  |
|--------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |  |  |                                                                                                                                               |  |  |
| Date :                                                       |  | Step #:                                                                                                                                                                            |  | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  | MRB (QS1042) Approval<br><br><br>Completed By<br><br><br>Lead hand / Supervisor Approval Verification<br><br><br>QC / QA Coordinator Approval |  |  |
| Description Work Order Deviation                             |  |                                                                                                                                                                                    |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |                                                                                                                                               |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                               |  |  |

| Root Cause                                  |                          |                       | FAULT CATEGORY           |                        |                          |                                   |                          |                       |                          |                      |
|---------------------------------------------|--------------------------|-----------------------|--------------------------|------------------------|--------------------------|-----------------------------------|--------------------------|-----------------------|--------------------------|----------------------|
| Environment <input type="checkbox"/>        | <input type="checkbox"/> | No Re-verification    | <input type="checkbox"/> | Pressure/Forced        | <input type="checkbox"/> | Temperature/Cure                  | <input type="checkbox"/> | Power Loss/Surge      | <input type="checkbox"/> | Positioned Wrong     |
| Design <input type="checkbox"/>             | <input type="checkbox"/> | Operator              | <input type="checkbox"/> | Bending                | <input type="checkbox"/> | Set-up                            | <input type="checkbox"/> | Folio/Program         | <input type="checkbox"/> | Outside Dimensions   |
| Doc/Data <input type="checkbox"/>           | <input type="checkbox"/> | Offset/Setup          | <input type="checkbox"/> | Centre Not Concentric  | <input type="checkbox"/> | BOM/Route                         | <input type="checkbox"/> | Grain                 | <input type="checkbox"/> | Over/Under tolerance |
| Equip/Tooling <input type="checkbox"/>      | <input type="checkbox"/> | Supplier              | <input type="checkbox"/> | Cracks                 | <input type="checkbox"/> | Broken/Damage/Defect              | <input type="checkbox"/> | Weld                  | <input type="checkbox"/> | Part Incorrect       |
| Handling/Pre <input type="checkbox"/>       | <input type="checkbox"/> | Training              | <input type="checkbox"/> | Crimp/Kink/Ripple/Wave | <input type="checkbox"/> | Inspection Incomplete/Unqualified | <input type="checkbox"/> | Wrong Stock Pulled    | <input type="checkbox"/> | Part Lost/Missing    |
| Material <input type="checkbox"/>           | <input type="checkbox"/> | Use for Testing       | <input type="checkbox"/> | Cuffs                  | <input type="checkbox"/> | Contamination                     | <input type="checkbox"/> | Out of Sequence       | <input type="checkbox"/> | Part Moved           |
| Internal Transport <input type="checkbox"/> | <input type="checkbox"/> | Poor Information      | <input type="checkbox"/> | Crushing               | <input type="checkbox"/> | Countersink                       | <input type="checkbox"/> | Off-set               | <input type="checkbox"/> | Drawing              |
| Tribal Knowledge <input type="checkbox"/>   | <input type="checkbox"/> | Rushing               | <input type="checkbox"/> | Heat Treat             | <input type="checkbox"/> | Cut Too Short                     | <input type="checkbox"/> | Mislabeled            | <input type="checkbox"/> | Finish               |
| LOA <input type="checkbox"/>                | <input type="checkbox"/> | Product Improvement   | <input type="checkbox"/> | Wave/Twist in Tube     | <input type="checkbox"/> | Instructions Incomplete/Unclear   | <input type="checkbox"/> | Fit/Function          | <input type="checkbox"/> | Misread              |
| Substation <input type="checkbox"/>         | <input type="checkbox"/> | Process Improvement   | <input type="checkbox"/> | Marks/Chatter          | <input type="checkbox"/> | Drill Holes                       | <input type="checkbox"/> | Misaligned/off center | <input type="checkbox"/> | Turning Sequence     |
| Past Expiry Date <input type="checkbox"/>   | <input type="checkbox"/> | Manufacturing Process | OTHER : _____            |                        |                          |                                   |                          |                       |                          |                      |
| Misidentified <input type="checkbox"/>      | <input type="checkbox"/> | Past Due              |                          |                        |                          |                                   |                          |                       |                          |                      |

**Work Order ID 146304****\*146304\***

Page 3

May 17, 2016 10:39:06 AM

Item ID: D4785-117 Accept **\*N900040100\*** Setup Start **\*NS1\***  
Revision ID: Stop **\*NS2\***  
Item Name: Rib Assembly  
Start Date: 5/17/2016 Start Qty: 2.00 **\*2\*** Cust Item ID:  
Required Date: 5/19/2016 Req'd Qty: 2.00 **\*2\*** Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description                    | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|---------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 140                            | QC21- Final Inspection - Work Order Release | 0.00                 |         |        |              |               |               |                  |                |
| <b>*140*</b>                   |                                             |                      |         |        |              |               |               |                  |                |
| QC                             | Memo                                        | 0.20                 |         |        |              |               |               |                  |                |
| Quality Control                |                                             |                      |         |        |              |               |               |                  |                |

MCS MAY 17 2016

MCS MAY 17 2016

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

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| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                 |  |
| Date : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Step #: _____                                                                                                                                                                      | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | MRB (QS1042) Approval                           |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                    | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                 |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | Completed By                                    |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | Lead hand / Supervisor<br>Approval Verification |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | QC / QA Coordinator<br>Approval                 |  |
| <b>Root Cause</b><br><div style="display: flex; justify-content: space-between;"> <div>           Environment <input type="checkbox"/><br/>           Design <input type="checkbox"/><br/>           Doc/Data <input type="checkbox"/><br/>           Equip/Tooling <input type="checkbox"/><br/>           Handling/Pre <input type="checkbox"/><br/>           Material <input type="checkbox"/><br/>           Internal Transport <input type="checkbox"/><br/>           Tribal Knowledge <input type="checkbox"/><br/>           LOA <input type="checkbox"/><br/>           Substation <input type="checkbox"/><br/>           Past Expiry Date <input type="checkbox"/><br/>           Misidentified <input type="checkbox"/> </div> <div>           No Re-verification <input type="checkbox"/><br/>           Operator <input type="checkbox"/><br/>           Offset/Setup <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Training <input type="checkbox"/><br/>           Use for Testing <input type="checkbox"/><br/>           Poor Information <input type="checkbox"/><br/>           Rushing <input type="checkbox"/><br/>           Product Improvement <input type="checkbox"/><br/>           Process Improvement <input type="checkbox"/><br/>           Manufacturing Process <input type="checkbox"/><br/>           Past Due <input type="checkbox"/> </div> </div> |                                                                                                                                                                                    | <b>FAULT CATEGORY</b><br><div style="display: flex; justify-content: space-between;"> <div>           Pressure/Forced <input type="checkbox"/><br/>           Bending <input type="checkbox"/><br/>           Centre Not Concentric <input type="checkbox"/><br/>           Cracks <input type="checkbox"/><br/>           Crimp/Kink/Ripple/Wave <input type="checkbox"/><br/>           Cuffs <input type="checkbox"/><br/>           Crushing <input type="checkbox"/><br/>           Heat Treat <input type="checkbox"/><br/>           Wave/Twist in Tube <input type="checkbox"/><br/>           Marks/Chatter <input type="checkbox"/> </div> <div>           Temperature/Cure <input type="checkbox"/><br/>           Set-up <input type="checkbox"/><br/>           BOM/Route <input type="checkbox"/><br/>           Broken/Damage/Defect <input type="checkbox"/><br/>           Inspection Incomplete/Unqualified <input type="checkbox"/><br/>           Contamination <input type="checkbox"/><br/>           Countersink <input type="checkbox"/><br/>           Cut Too Short <input type="checkbox"/><br/>           Instructions Incomplete/Unclear <input type="checkbox"/><br/>           Drill Holes <input type="checkbox"/> </div> <div>           Power Loss/Surge <input type="checkbox"/><br/>           Folio/Program <input type="checkbox"/><br/>           Grain <input type="checkbox"/><br/>           Weld <input type="checkbox"/><br/>           Wrong Stock Pulled <input type="checkbox"/><br/>           Out of Sequence <input type="checkbox"/><br/>           Off-set <input type="checkbox"/><br/>           Misabeled <input type="checkbox"/><br/>           Fit/Function <input type="checkbox"/><br/>           Misaligned/off center <input type="checkbox"/> </div> <div>           Positioned Wrong <input type="checkbox"/><br/>           Outside Dimensions <input type="checkbox"/><br/>           Over/Under tolerance <input type="checkbox"/><br/>           Part Incorrect <input type="checkbox"/><br/>           Part Lost/Missing <input type="checkbox"/><br/>           Part Moved <input type="checkbox"/><br/>           Drawing <input type="checkbox"/><br/>           Finish <input type="checkbox"/><br/>           Misread <input type="checkbox"/><br/>           Turning Sequence <input type="checkbox"/> </div> </div> |  |                                                 |  |
| OTHER : <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                 |  |

# Picklist Print

May 17, 2016 10:39:16 AM

Page 1

Work Order ID: 146304

**\*146304\***

Parent Item: D4785-117

**\*D4785-117\***

Parent Item Name: Rib Assembly

Start Date: 5/17/2016

Required Date: 5/19/2016

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP REV:A 13.06.21 DWG REV.B DD VERF:JFS

| Component Item ID/<br>Item Name        | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status            |
|----------------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|-------------------|
| D4021-9<br><b>*D4021-9*</b><br>Bushing |                        | Manufactured  | No          |                     |                  |                 | Each               | 238.0000       |             | 4            |               | MAY 17 2016    | DAS<br>24<br>9-89 |

Location

Loc Qty

Loc Code

WA004

238

141539

33

145800

205

D4306-1

Manufactured

No

Each

8.0000

2

MAY 17 2016

DAS  
24  
9-89

**\*D4306-1\***

Rib

Location

Loc Qty

Loc Code

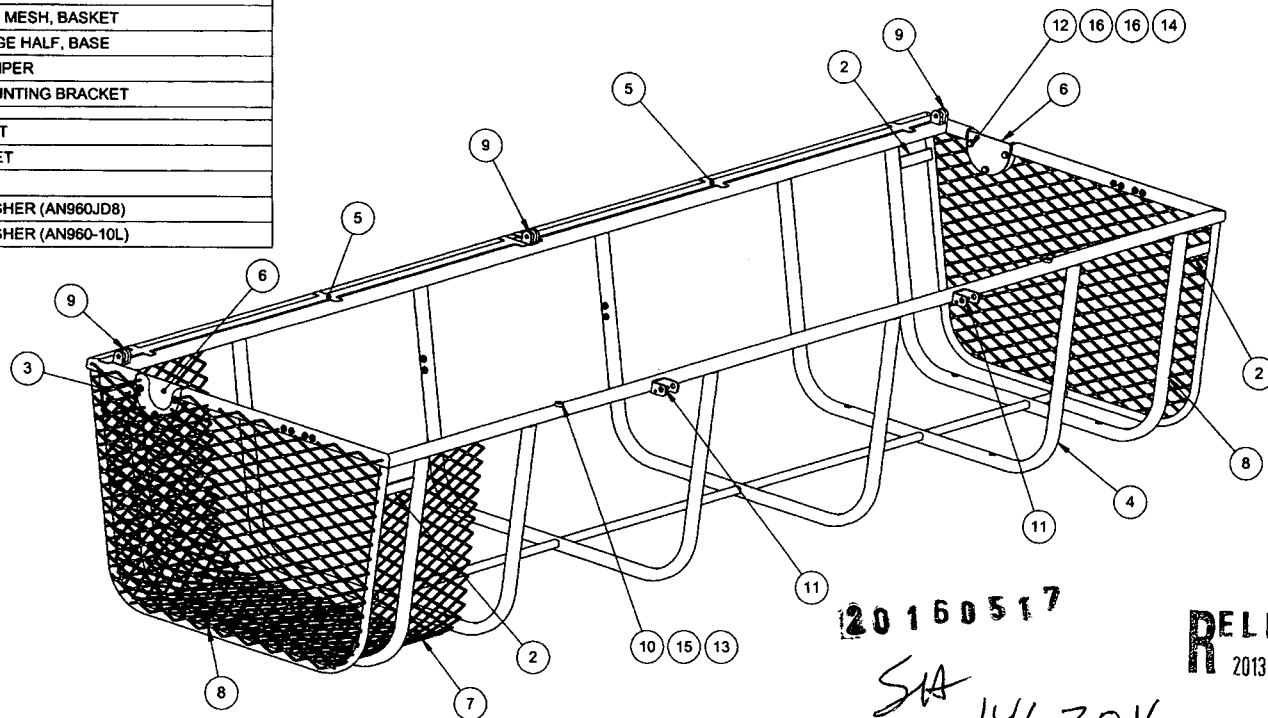
WA004

8

145233

8

| ITEM NO. | QTY.<br>-041 | PART NUMBER   | DESCRIPTION                  |
|----------|--------------|---------------|------------------------------|
| 1        | X            | D4785-041     | LONG BASKET BASE ASSY, LH/RH |
| 2        | 3            | D4793-1       | HANDLE PLATE                 |
| 3        | 1            | D4793-3       | WIDE HANDLE PLATE            |
| 4        | 1            | D4785-101     | TUBULAR ASSEMBLY, LH/RH      |
| 5        | 2            | D4672-1       | BLANKING PLATE               |
| 6        | 2            | D4021-5       | BLANKING PLATE               |
| 7        | 1            | D4020-1       | MESH BASKET LONG, BASE       |
| 8        | 2            | D4020-11      | END MESH, BASKET             |
| 9        | 3            | D4016-1       | HINGE HALF, BASE             |
| 10       | 2            | D2931         | BUMPER                       |
| 11       | 2            | D2581         | MOUNTING BRACKET             |
| 12       | 6            | AN3-10A       | BOLT                         |
| 13       | 2            | MS20600AD4W3  | RIVET                        |
| 14       | 6            | MS21042L3     | NUT                          |
| 15       | 2            | NAS1149DN832J | WASHER (AN960JD8)            |
| 16       | 12           | NAS1149F0332P | WASHER (AN960-10L)           |



**D4785-041 LONG BASKET BASE ASSY, LH/RH**

**NOTES:**

- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT WHITE (4.3.5.2) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 50.42 lbs APPROX
- 8) INSTALL AFTER FINISH
- 9) MASK HOLES PRIOR TO POWDER COAT
- 10) WELD PER DART QSI 004

20160517

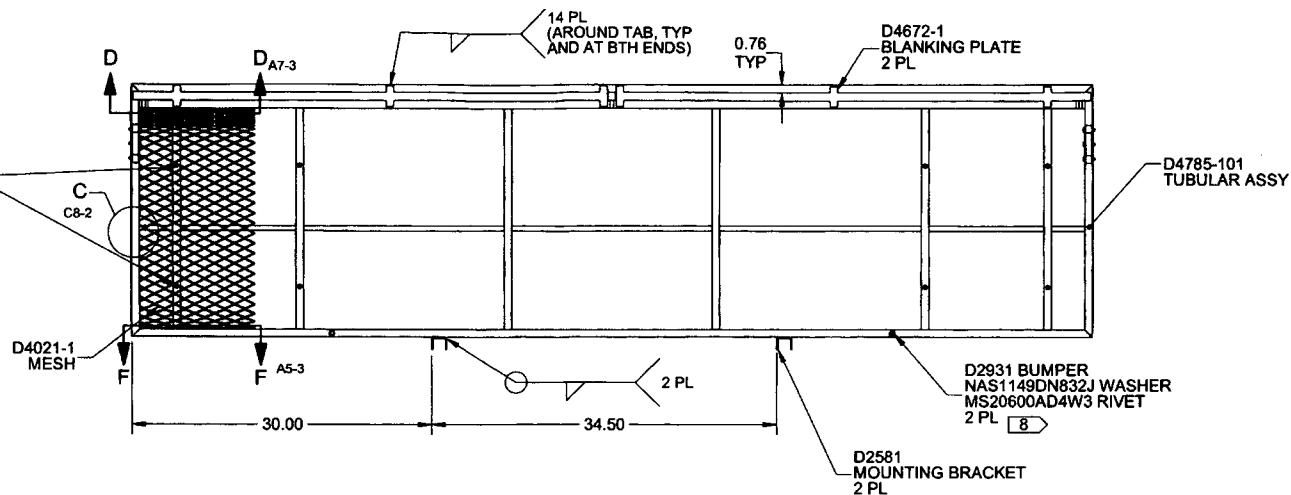
SHA 146304

**RELEASED**  
2013-06-20

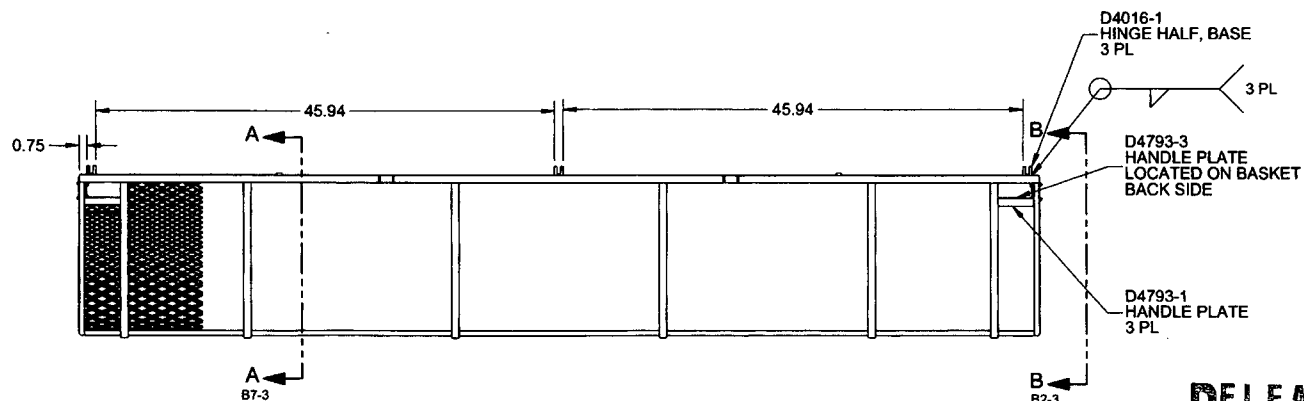
|            |                                                                                             |                                                                                                                                                                                                                                                                                |              |
|------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| B          | REPLACE D3916-5 WITH D4785-117 (ZN B5-4, B4-4, B5-7);<br>REVISE D4785-5 DIMENSION (ZN B5-5) | RF                                                                                                                                                                                                                                                                             | 13.06.11     |
| A          | NEW ISSUE                                                                                   | RF                                                                                                                                                                                                                                                                             | 13.05.24     |
| REV.       | DESCRIPTION                                                                                 | BY                                                                                                                                                                                                                                                                             | DATE         |
| DESIGN     | RF                                                                                          | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                       |              |
| DRAWN      | RF                                                                                          |                                                                                                                                                                                                                                                                                |              |
| CHECKED    | DC                                                                                          | DRAWING NO.                                                                                                                                                                                                                                                                    | REV. B       |
| MFG. APPR. | DS                                                                                          | D4785                                                                                                                                                                                                                                                                          | SHEET 1 OF 7 |
| APPROVED   | TS                                                                                          | TITLE                                                                                                                                                                                                                                                                          | SCALE        |
| DE APPR.   | TS                                                                                          | LONG BASKET BASE ASSY                                                                                                                                                                                                                                                          | NTS          |
| DATE       | 13.06.11                                                                                    | COPYRIGHT © 2013 BY DART AEROSPACE LTD<br>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS<br>NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT<br>WRITTEN PERMISSION FROM DART AEROSPACE LTD. |              |



TRIM MESH LOCALLY  
Ø0.50 - Ø0.60  
TO CLEAR BUSHINGS  
TYP



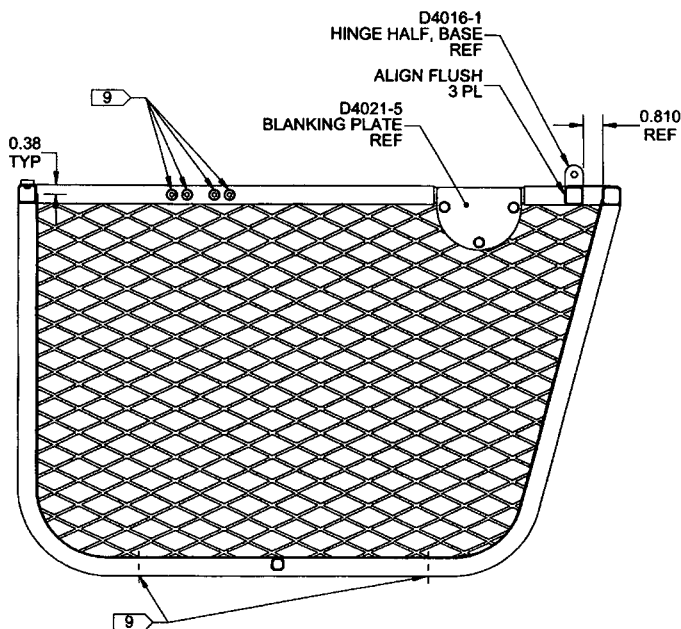
**DETAIL C** D7-2



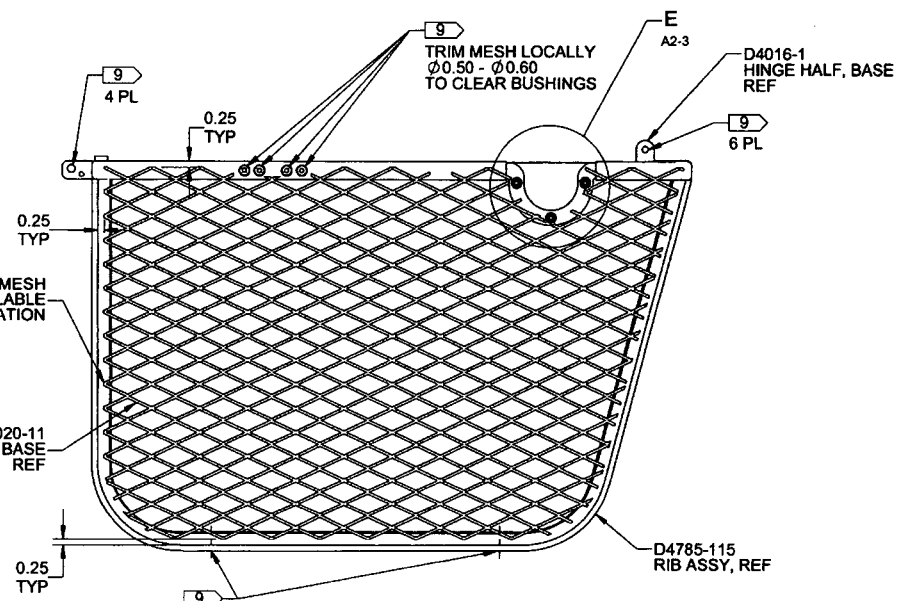
**D4785-041 LONG BASKET BASE ASSY, LH/RH**  
(MESH SHOWN LOCALLY FOR CLARITY)

**RELEASED**  
2013-06-20

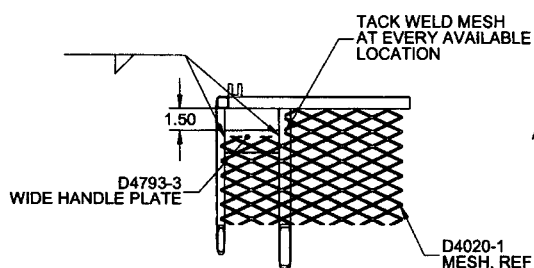
|                                                                                                                                                                                                                                |          |                             |              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------|--------------|
| DESIGN                                                                                                                                                                                                                         | RF       | <b>DART AEROSPACE LTD</b>   |              |
| DRAWN                                                                                                                                                                                                                          | RF       | HAWKESBURY, ONTARIO, CANADA |              |
| CHECKED                                                                                                                                                                                                                        | PC       | DRAWING NO.                 | REV. B       |
| MFG. APPR.                                                                                                                                                                                                                     | JS       | D4785                       | SHEET 2 OF 7 |
| APPROVED                                                                                                                                                                                                                       | #        | TITLE                       | SCALE        |
| DE APPR.                                                                                                                                                                                                                       | #        | LONG BASKET BASE ASSY       |              |
| DATE                                                                                                                                                                                                                           | 13.06.11 | NTS                         |              |
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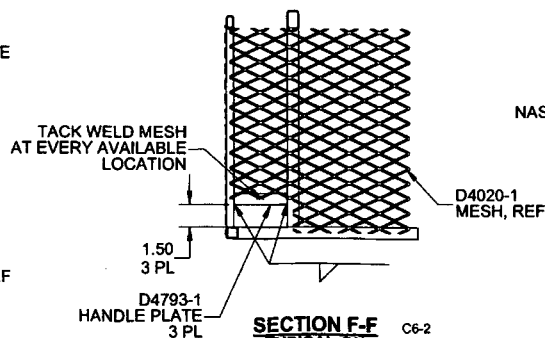
**SECTION A-A** B7-2



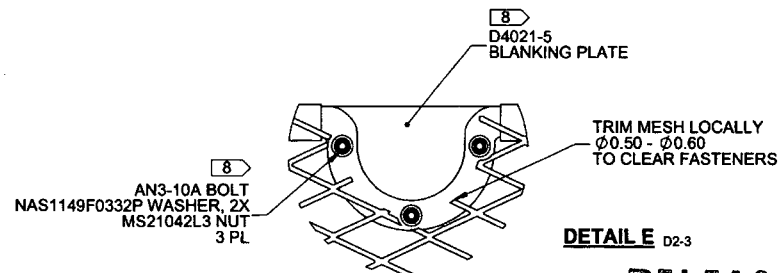
**SECTION VIEW B-B** A2-2



**SECTION D-D** D6-2



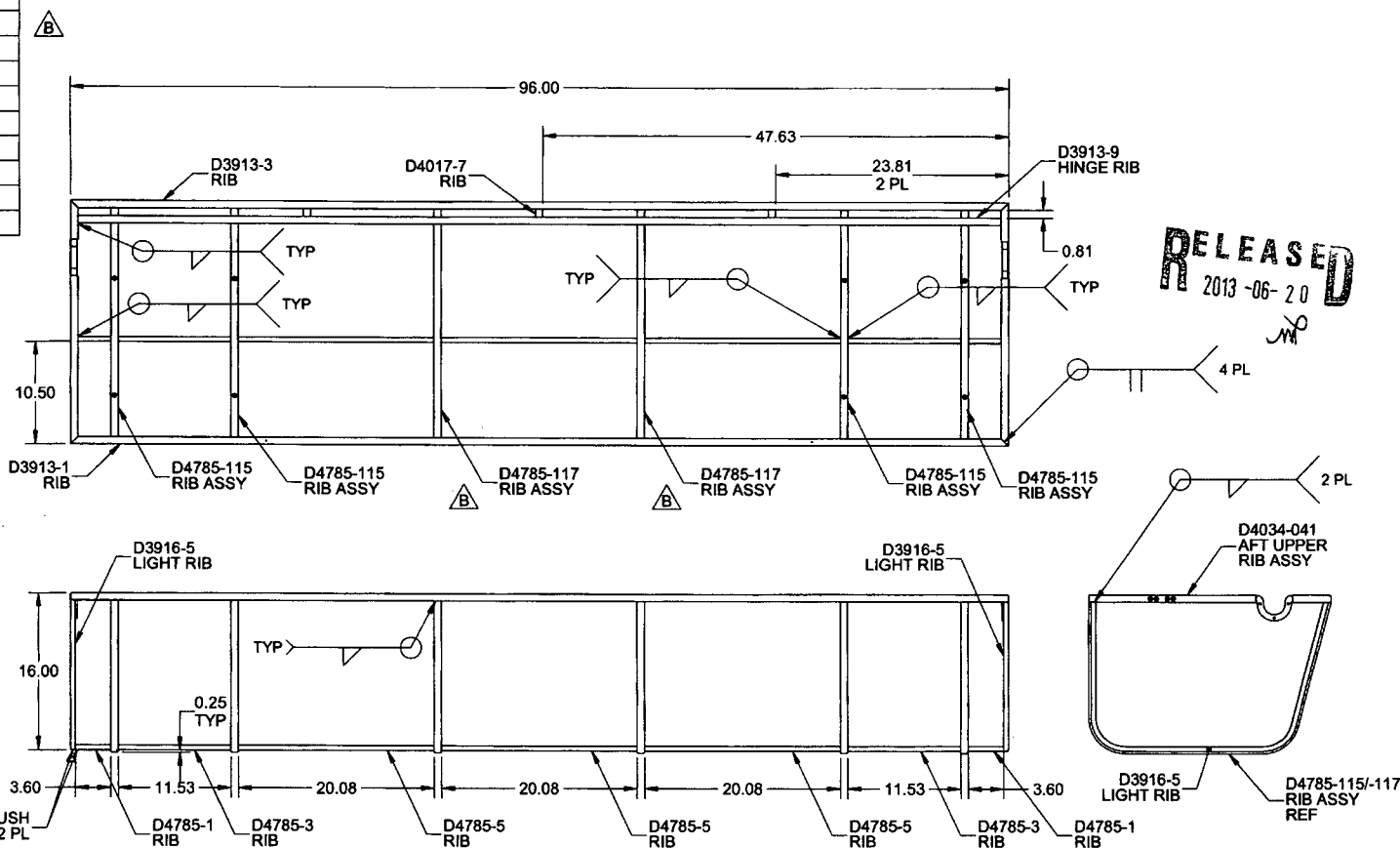
**SECTION F-F** C6-2  
TYPICAL ON  
3 PL



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2013-06-20

|                                                                                                                                                                                                                                                                          |          |                             |              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------|--------------|
| DESIGN                                                                                                                                                                                                                                                                   | RF       | DART AEROSPACE LTD          |              |
| DRAWN                                                                                                                                                                                                                                                                    | RF       | HAWKESBURY, ONTARIO, CANADA |              |
| CHECKED                                                                                                                                                                                                                                                                  | DL       | DRAWING NO.                 | REV. B       |
| MFG. APPR.                                                                                                                                                                                                                                                               | DL       | D4785                       | SHEET 3 OF 7 |
| APPROVED                                                                                                                                                                                                                                                                 | DL       | TITLE                       | SCALE        |
| DE APPR.                                                                                                                                                                                                                                                                 | DL       | LONG BASKET BASE ASSY       |              |
| DATE                                                                                                                                                                                                                                                                     | 13.06.11 | NTS                         |              |
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| ITEM NO. | QTY. | PART NUMBER | DESCRIPTION        |
|----------|------|-------------|--------------------|
| 1        | X    | D4785-101   | TUBULAR ASSEMBLY   |
| 2        | 2    | D4785-1     | RIB                |
| 3        | 3    | D4785-5     | RIB                |
| 4        | 4    | D4785-115   | RIB ASSEMBLY       |
| 5        | 2    | D4785-117   | RIB ASSEMBLY       |
| 6        | 2    | D4785-3     | RIB                |
| 7        | 3    | D4017-7     | RIB                |
| 8        | 1    | D4034-041   | AFT UPPER RIB ASSY |
| 9        | 1    | D4034-043   | FWD UPPER RIB ASSY |
| 10       | 2    | D3916-5     | RIB, LIGHT         |
| 11       | 1    | D3913-1     | RIB                |
| 12       | 1    | D3913-3     | RIB                |
| 13       | 1    | D3913-9     | HINGE RIB          |

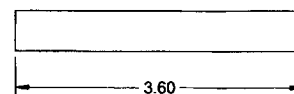


# NOTES:

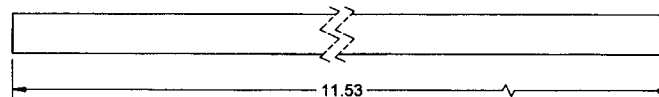
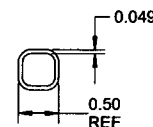
- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 28.65 lbs
- 8) WELD PER DART QSI 004

## D4785-101 TUBULAR ASSEMBLY, LH/RH

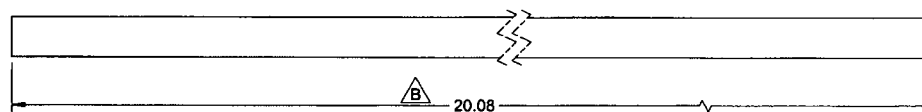
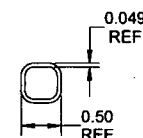
|            |          |                                                                                                                                                                                                                                                                           |              |
|------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | RF       | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                  |              |
| DRAWN      | RF       |                                                                                                                                                                                                                                                                           |              |
| CHECKED    | SC       | DRAWING NO.                                                                                                                                                                                                                                                               | REV. B       |
| MFG. APPR. | SC       | <b>D4785</b>                                                                                                                                                                                                                                                              | SHEET 4 OF 7 |
| APPROVED   | SC       | TITLE                                                                                                                                                                                                                                                                     | SCALE        |
| DE APPR.   | SC       | <b>LONG BASKET BASE ASSY</b>                                                                                                                                                                                                                                              | NTS          |
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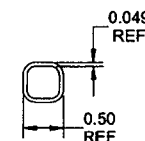
**D4785-1 RIB**



**D4785-3 RIB**



**D4785-5 RIB**



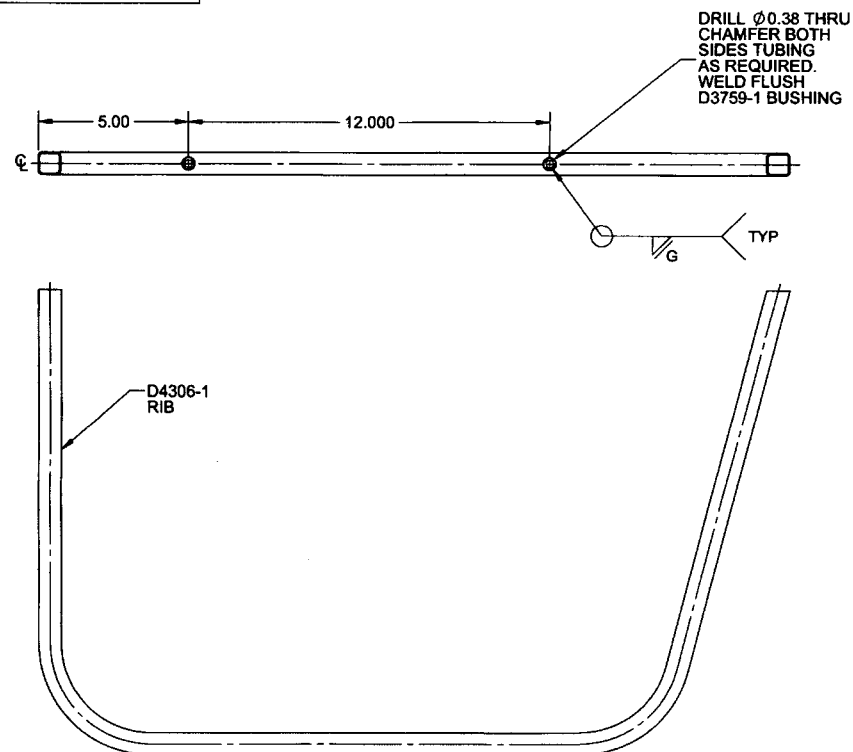
**NOTES:**

- 1) MATERIAL: AISI 304/316 SEAMLESS STAINLESS STEEL SQUARE TUBE, 0.50 x 0.50 x 0.049 WALL  
PER ASTM A554 OR ASTM A269 MILL FINISH  
REF DART SPEC. M304TS0.500W.049
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: SEE ASSEMBLED WEIGHTS

**RELEASED**  
2013-06-20  
*W*

|            |           |                                                                                                                                                                                                                                                                                                 |              |
|------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | RF        | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                                        |              |
| DRAWN      | RF        |                                                                                                                                                                                                                                                                                                 |              |
| CHECKED    | <i>PC</i> | DRAWING NO.                                                                                                                                                                                                                                                                                     | REV. B       |
| MFG. APPR. | <i>IS</i> | <b>D4785</b>                                                                                                                                                                                                                                                                                    | SHEET 5 OF 7 |
| APPROVED   | <i>HA</i> | TITLE                                                                                                                                                                                                                                                                                           | SCALE        |
| DE APPR.   |           | <b>LONG BASKET BASE ASSY</b>                                                                                                                                                                                                                                                                    | NTS          |
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| ITEM NO. | QTY.<br>-115 | PART NUMBER | DESCRIPTION  |
|----------|--------------|-------------|--------------|
| 1        | X            | D4785-115   | RIB ASSEMBLY |
| 2        | 1            | D4306-1     | RIB          |
| 3        | 2            | D3759-1     | BUSHING      |



**D4785-115 RIB ASSEMBLY**  
MAKE FROM D4306-1 RIB

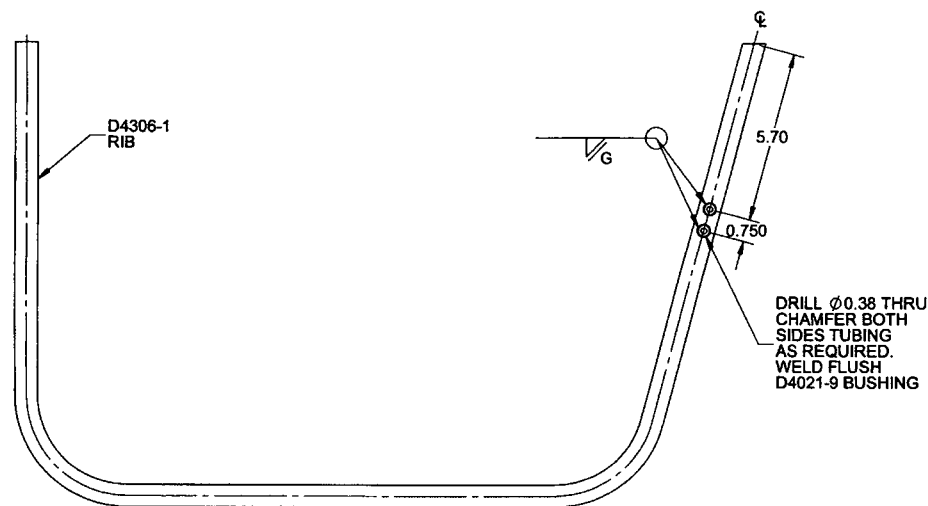
**RELEASED**  
2013-06-20  
ND

**NOTES:**

- 1) MATERIAL: D4306-1 RIB
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.80 lbs
- 8) WELD PER DART QSI 004

|            |          |                                                                                                                                                                                                                                                                                         |              |
|------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | RF       | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                                |              |
| DRAWN      | RF       |                                                                                                                                                                                                                                                                                         |              |
| CHECKED    | SC       | DRAWING NO.                                                                                                                                                                                                                                                                             | REV. B       |
| MFG. APPR. | N        | D4785                                                                                                                                                                                                                                                                                   | SHEET 6 OF 7 |
| APPROVED   | N        | TITLE                                                                                                                                                                                                                                                                                   | SCALE        |
| DE APPR.   | N        | LONG BASKET BASE ASSY                                                                                                                                                                                                                                                                   | NTS          |
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| ITEM NO. | QTY.<br>-117 | PART NUMBER | DESCRIPTION  |
|----------|--------------|-------------|--------------|
| 1        | X            | D4785-117   | RIB ASSEMBLY |
| 2        | 1            | D4306-1     | RIB          |
| 3        | 2            | D4021-9     | BUSHING      |



**D4785-117 RIB ASSEMBLY**   
MAKE FROM D4306-1 RIB

**NOTES:**

- 1) MATERIAL: D4306-1 RIB
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.81 lbs
- 8) WELD PER DART QSI 004

**RELEASED**  
2013-06-20  


|            |                                                                                       |                                                                                                                                                                                                                                                                                         |              |
|------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | RF                                                                                    | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                                |              |
| DRAWN      | RF                                                                                    |                                                                                                                                                                                                                                                                                         |              |
| CHECKED    |  | DRAWING NO.                                                                                                                                                                                                                                                                             | REV. B       |
| MFG. APPR. |  | <b>D4785</b>                                                                                                                                                                                                                                                                            | SHEET 7 OF 7 |
| APPROVED   |  | TITLE                                                                                                                                                                                                                                                                                   | SCALE        |
| DE APPR.   |  | <b>LONG BASKET BASE ASSY</b>                                                                                                                                                                                                                                                            | NTS          |
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